

Supplementary Information

Title: Migration tracking reveals geographic variation in the vulnerability of a Nearctic-Neotropical migrant bird

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Supplementary Table S1. Tagging details by location for the Swainson's Thrush 2014-15

deployment effort in central coastal California and two regions within the Cascade-Sierra, combined with data from the 2010 tagging coastal effort as part of an early phase of this study¹.

Region / Locality	Study Site	# Tagged: Light-level, GPS (Female: Male)	Deployment Lat, Lon	Deployment Year
<i>Coastal Region, San Francisco Bay Area, California</i>				
Point Reyes area, coastal Marin County, north of San Francisco Bay	Palomarin Field Station, Point Reyes National Seashore	13 ^a , 7 ^b (14:6)	37.93°, -122.74°	2010 ^a 2015
	Muddy Hollow, Point Reyes National Seashore	11 ^a , 9 ^b (9:11)	38.05°, -122.87°	2010 ^a 2015
	Pine Gulch Creek, Bolinas Lagoon Open Space Preserve	11 ^a , 9 ^b (7:13)	37.92°, -122.69°	2010 ^a 2015
	Redwood Creek, Golden Gate National Recreation Area	0, 5 ^b (2:3)	37.87°, -122.58°	2015
coastal San Mateo County, south of San Francisco Bay	TomKat Ranch, San Mateo County	10 ^c , 0 (5:5)	37.25°, -122.35°	2014
<i>Cascade-Sierra, California</i>				
Tahoe region, northern Sierra Nevada	General Creek, Sugar Pine Point State Park, El Dorado County	2 ^d , 0 (0:2)	39.03°, -120.16°	2014
	Strawberry Creek, El Dorado National Forest, El Dorado County	3 ^d , 0 (1:2) 6 ^d , 3 ^b (2:7)	38.78°, -120.14°	2014 2015
	Ward Canyon, Lake Tahoe Basin Management Unit, Placer County	7 ^d , 0 (1:6) 6 ^d , 2 ^b (1:7)	39.13°, -120.22°	2014 2015
Lassen region, northern Sierra Nevada and southern Cascades, Plumas County	Warner Valley, Lassen National Forest, Cascades	8 ^d , 10 ^b (2:16)	40.42°, -121.34°	2015
	Humbug Valley, Sierra Nevada	3 ^d , 0 (0:3)	40.14°, -121.23°	2015

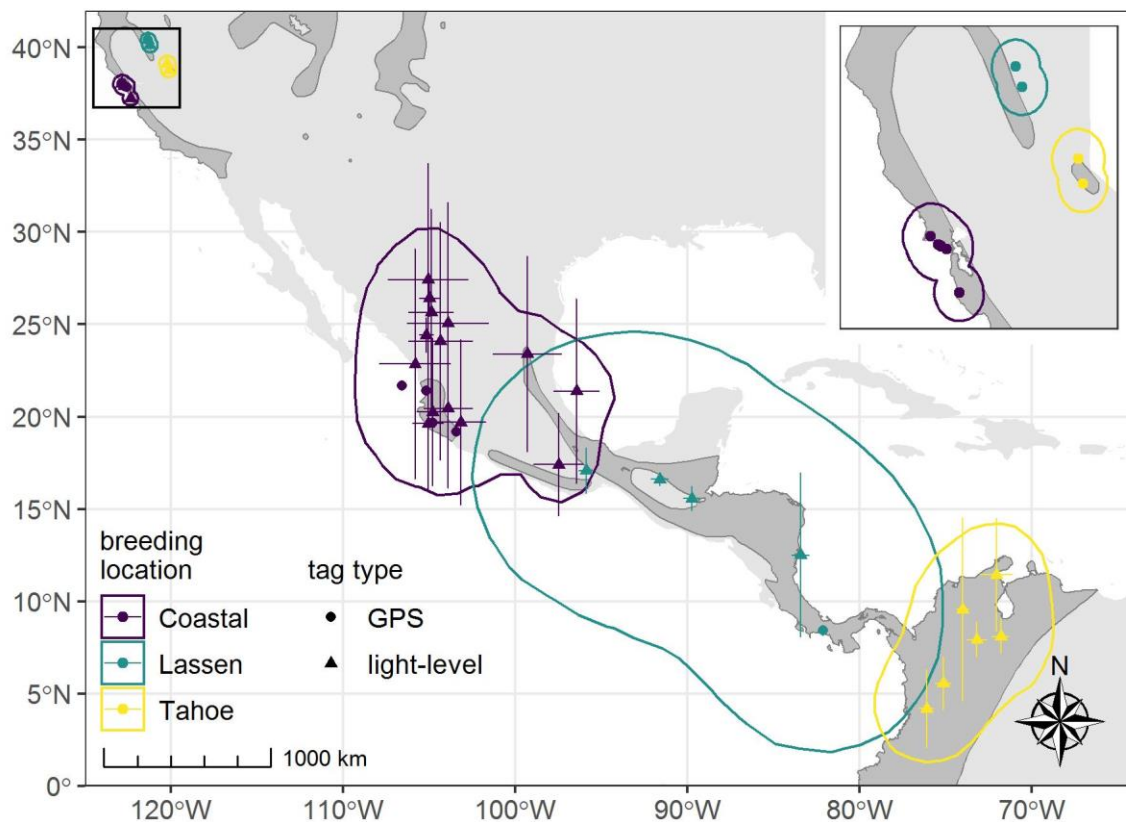
^a Mk12-S and Mk10-S geolocators developed by the British Antarctic Survey with 15 mm stalks¹

^b PinPoint8 GPS tags developed by Lotek Wireless

^c PFOC214 light-level tags developed by the British Antarctic Survey with 14 mm stalks

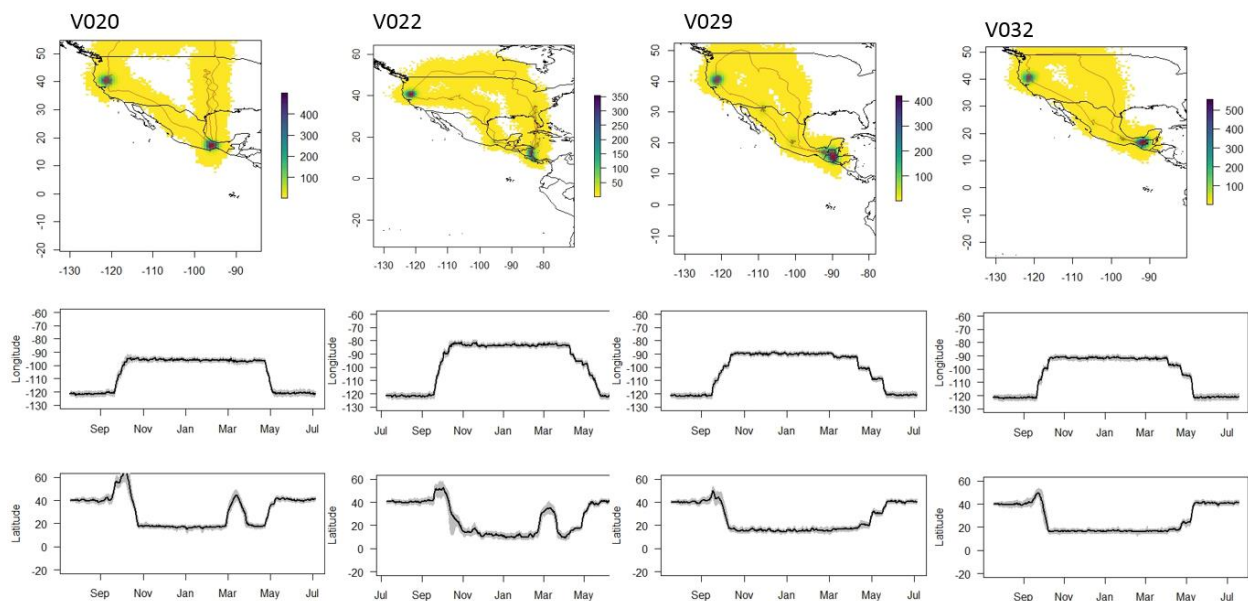
^d Intigeo-P65B1-14 light-level tags developed by Migrate Technology Ltd with 14 mm stalks

Supplementary Figure S1. Wintering locations of individual Swainson's Thrushes tagged at each of three breeding regions (the coastal San Francisco Bay region, including data from the earlier phase of this study¹; and Lassen and Tahoe regions within the Cascade-Sierra) in California, with light-level geolocator tag error bars and the original kernel density outlines prior to clipping to species range. Dark gray indicates the published breeding and winter ranges²; the authors know of additional breeding sites slightly beyond these boundaries, including where Lassen birds were tagged.

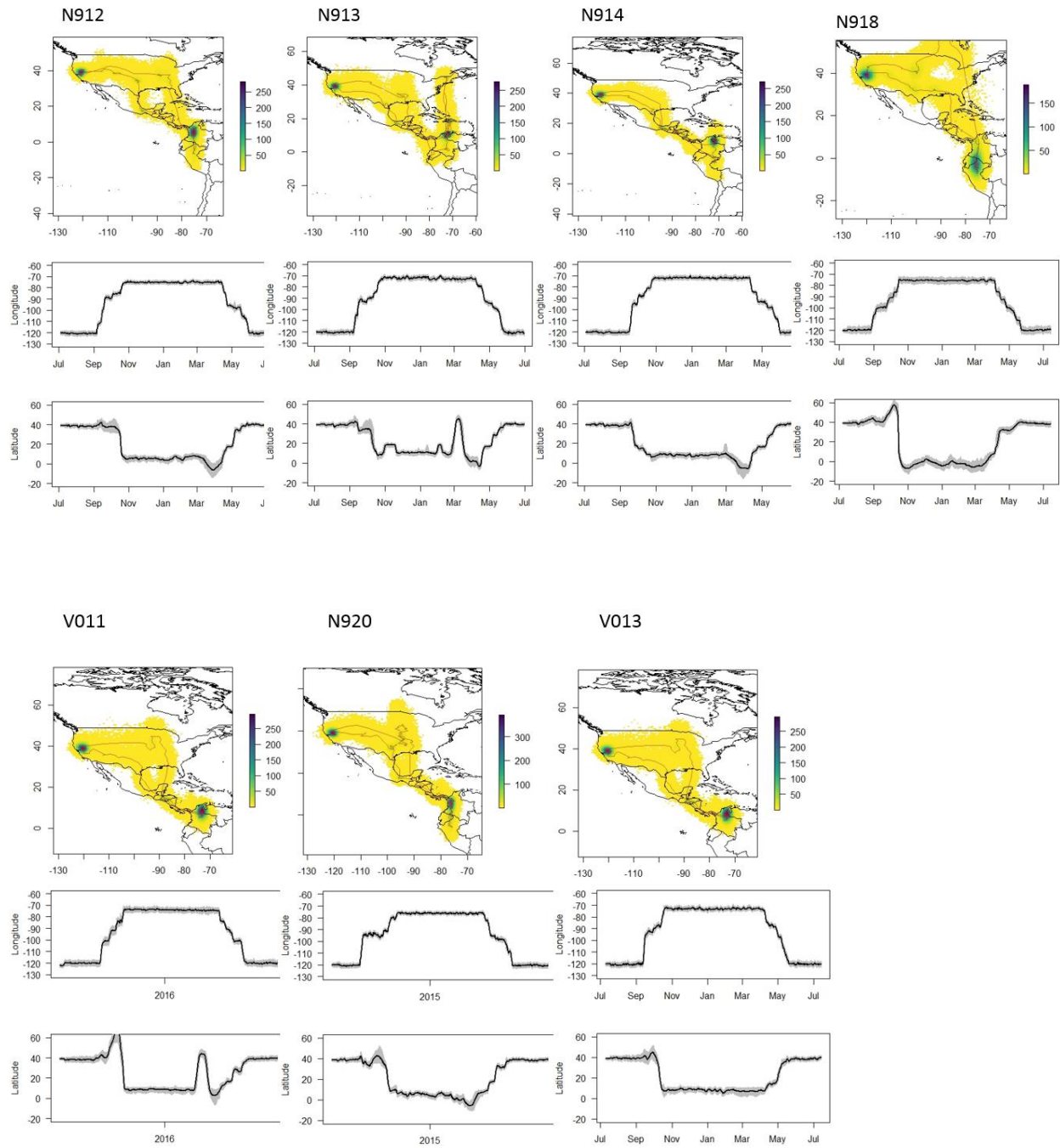


Supplementary Figure S2a-c. Complete individual light-level results for all recovered tags from the 2014-16 phase of the study for the (a) Lassen, (b) Tahoe, and (c) coastal regions. We include the map for one Tahoe bird (tag N918) that we exclude from the overall results, whose wintering areas varied from as far north as Cuba to as far south as Peru depending on minor variations in the analysis method (e.g., changing calibration period dates). See earlier publication for tag data from the previous phase of the study¹, and Supplementary Figure 1 for GPS tag data. Migratory “pathways” are shown on each map in yellow; the more northerly ones are from fall migration, and due to birds migrating around the equinox when latitude cannot be estimated, should not be considered accurate depictions of the migratory routes.

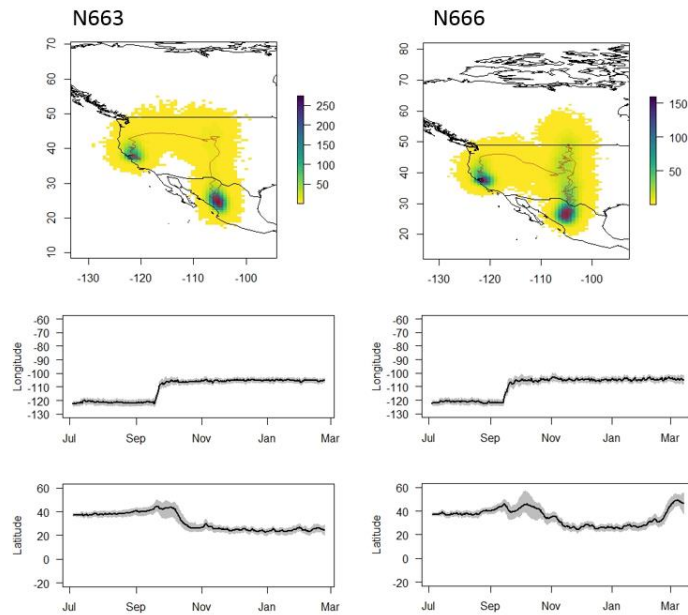
2a. Lassen Region Birds



2b. Tahoe Region Birds



2c. South San Francisco Bay Birds (Coastal Region)



REFERENCES

1. Cormier, R. L., Humple, D. L., Gardali, T. & Seavy, N. E. Light-level geolocators reveal strong migratory connectivity and within winter movements for a coastal California Swainson's Thrush population. *Auk*. 130, 283-290 (2013).
2. NatureServe. NatureServe Web Service. Arlington, Virginia. [Online.] Available at services.natureserve.org (2012).